

**SCIENTIFIC COUNCIL MEETING – JUNE 2015****Spanish Research Report for 2014**

by

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Spanish catch information used in this Report is based on the logbook data contributed by the Spanish Administration. Table 1 presents the catches by species and Division in 2014 based on this information. The split of catches and effort between the different gears in this Report are based on information from NAFO observers on board. In 2014 NAFO observers information from 1,122 days was available while total effort of the Spanish fleet in NAFO Regulatory Area was 1,221 days (around 92% coverage).

In addition to NAFO observers, IEO scientific observers were on board 303 fishing days that it means 25 % of the Spanish total effort. All length, age and biological information presented in this paper is based on sampling carried out by IEO scientific observers: 582 samples were taken in 2014, with 65,437 individuals of different species examined (Table 2).

**SUBAREA 3****A. Status of the fisheries**

A total of 12 Spanish trawlers operated in Div. 3LMNO NAFO Regulatory Area during 2014, amounting to 1,205 days (18,271 hours) of fishing effort. Table 3 presents the Spanish effort (fishing hours) since 2003 in NAFO Regulatory Area (NRA) Subarea 3. Total catches (Table 1) for all species combined in Div. 3LMNO were 14,318 tons in 2014.

Table 4 shows the effort (hours) by quarter, Division and their percentage by depth. Table 5 presents the percentage of the effort by Division and mesh size and Figure 1 shows the Spanish fleet footprint in 2014 by mesh sizes based on the NAFO Observers information.

These effort tables and figure show that the Spanish fleet carry out different fisheries in NAFO Subarea 3 characterized by different mesh size, target species, depth and fishing area. The Spanish fishery in NAFO Subarea 3 in 2014 has the same pattern described by Gonzalez-Costas (2012): Spanish fleet had the following fisheries in NAFO Division 3LMNO: 1) In Divisions 3LMNO at more than 600 meters depth with demersal 130 mm mesh size gear with Greenland halibut as target species. 2) In Divisions 3LMNO, mainly in Div 3O and 3M with demersal 130 mm mesh size gear in the 200-600 strata. The target species is the redfish. 3) In Divisions 3NO with demersal 130 mm mesh size at depth less than 200 meters there is a mix fishery with different catch composition. 4) In Divisions 3NO with 280 mm mesh size at less than 200 meters depth. The target species is the skates. 5) In Division 3L with 40 mm mesh size at depth between 300-500 meters. The target species of this fishery is the shrimp. 6) In Division 3M at depth between 150-550 meters targeting cod with 130 mm mesh size gear.

Effort and fisheries by Division were: in Div. 3L, most of the effort was performed at more than 600 meters depth using cod-end mesh size of 135 mm, indicating that the fleet targeted Greenland halibut. A small part of the effort (5%) was carried out at depth between 200-600 meters targeting redfish and shrimp. Regarding Div. 3M, most of the effort was carried out using 135 mm cod-end mesh size at less than 600 m depth ( 55%)

targeting redfish and cod and in less degree at depths more than 600 m (45%) targeting Greenland halibut. In Div. 3N, the effort carried out using 280 mm was the 43% and with 135 mm cod-end mesh size was 57%, which indicates that the fleet targeted mainly skate in depth less than 200 m. and Greenland halibut in depth more than 600 m. Fishing effort in Div. 3O was limited (12%) targeting skates using mainly 280 mm mesh size (49%) in depth less than 200 meters and redfish in depth between 200-600 meters using 135 mm mesh size (51%).

In addition to NAFO observers (NAFO Observers Program), 8 IEO scientific observers were onboard Spanish vessels, comprising a total of 303 observed fishing days, around 25% coverage of the total Spanish effort. Besides recording catches, discards and effort, these observers carried out biological sampling of the main species taken in the catch. For Greenland halibut, roughhead grenadier, American plaice and cod this includes recording weight at length, sex-ratio, maturity stages, performing stomach contents analyses and collecting material for reproductive studies. Otoliths of these four species were also taken for age determination. In 2014, 582 length samples were taken, with 65,437 individuals of different species examined to obtain the length distributions (Table 2). Length and age distributions presented in this paper are based on sampling carried out by these observers. Length-weight relationships parameters used to calculate the Sum Of Products (SOP) of the length distribution are shown by species in Table 6. These relationships were estimated based on the data collected in the European Union surveys information carried out in 2014 in the NAFO Regulatory Area (NRA).

The Spanish activity en the NRA Subarea 3 in 2014, stock by stock, was the following:

### **Cod**

**Div. 3NO:** In Div. 3N, the most important part of the catches of this species were taken as by-catch in the skate fishery (280 mm mesh size) and in less degree in the redfish fishery. In Div. 3O were taken the 34% of the Spanish catches of this stock and were by catch of the skate and redfish fisheries. Table 7 shows the catch length distribution for Div. 3NO cod. The bulk of the catches are comprised in the 30-47 cm range even though it can be observed an important number of individuals with length more than 50 cm. This length distribution is slightly different than the observed the year 2013.

**Div. 3M:** Catches in Div. 3M were 2,099 tons and most of them were taken in the direct fishery. A small part was taken as by catch of the redfish fishery. The legal mesh size of the Cod fishery is 130 mm. In 2014 only trawlers operated in this fishery. The total length distributions of the Spanish catches are presented in Table 8 and we can observe that most of the catches are comprised in the range of 40-80 cm. The 2014 catch length distribution is quite different from the 2013. The 2014 catch length distribution is bigger than the 2013. The mode in 2013 was around 39 cm. and in 2014 is around 52 cm.

Total age composition based in the commercial Spanish Age Length Key (Table 25), mean weight and mean length at age for 3M Cod are presented in Table 8 (cont.). Most of the 3M Cod catches corresponds to ages 4 to 8, with a peak at ages 5.

### **Redfish**

**3M:** In Div. 3M the redfish catches in 2014 have been 1031 tons and most of them were catch in a direct fishery. The rest of the catches of this species was taken as by-catch in the cod fishery. Table 9 shows the Spanish catches length distribution for redfish Division 3M and it can be observed that the bulk of the catches are in the 22-32 cm range. This length distribution of catches in Div. 3M are bigger than the observed in Div 3O.

**Div. 3LN:** Spanish catches in 2014 were 388 tons. Most of the catches were taken in the reopened fishery for this stock. Table 10 shows the Spanish catches length distribution for redfish Division 3LN and it can be observed that the bulk of the catches are in the 21-31 cm range. This length distribution of catches in Div. 3LN is quite similar to the observed in Div. 3M and bigger than the observed in Div 3O.

**Div. 3O:** A directed fishery for this species took place in Div. 3O. Catches have reached 932 tons in this Division, most of them with 130 mm mesh size. Catches length distribution for Div. 3O are presented in Table 11 and it can be observed that are smaller (18-26 cm) than the observed in Div. 3M and Div. 3LN.

### American plaice

**Div. 3LNO:** Spanish catches in 2014 in Div. 3LNO were 249 tons. Most of the catches were taken with 280 mm mesh size (167 tons) as by-catch of the skate fishery and in less degree with 130 mm mesh size (82 tons). Length distributions with 280 mm mesh size have a bigger length range than the 130 mm mesh size. Table 12 presents the total length distribution for Div. 3LNO. It can be observed a clear different length between sexes, males are smaller than females. The bulk of catches were in the range of 26-45 cm.

**Div. 3M:** Catches in Div. 3M only amounted 69 tons and most of them were taken as by-catch of the cod and redfish fisheries. Table 13 presents the total length distribution for Div. 3M. It was only available one sample with a small number of measured individuals. Due to this problem, this sample is not very representative of the catches distributions.

### Witch flounder

**Div. 2J and 3KL:** Spanish catches for this stock in 2014 were 26 tons and were taken in the small part of NAFO Regulatory Area (NRA) of Div. 3L as by catch of the Greenland halibut fishery. Length distributions of catches based only on one sample are presented in Table 14. The bulk of catches were in the range of 28-37 cm.

**Div. 3M:** This species in this Division was taken as by-catch in the Cod and redfish fishery. Catches this year were 89 tons and there is not management stock for this species in this Division. In 2014 there are not available catches length distributions for this species in Divisions M.

**Div. 3NO:** Spanish catches for this stock in 2014 were 152 tons. Most of the catches were taken as by-catch in the Redfish and Greenland halibut fisheries (69%) and in less degree in the skate fishery (31%). Table 15 shows the total Spanish length distribution for this species. The 3NO catches length distributions for this stock were only based on samples taken with 130 mm mesh size. Catch sizes are bigger than the observed in Division 3L. The bulk of catches were in the range of 33-47 cm.

### Yellowtail flounder

**Div. 3LNO:** In 2014 the yellowtail flounder Spanish catches were 259 tons. Most of the catches were taken in Div. 3NO in the skate fishery (215 tons) as by-catch. Catches in Div. 3L were only 3 tons taken with 130 mm mesh size gear. Length distributions for yellowtail flounder in Div. 3LNO are presented in Table 16. Most of the catches are in the 27-40 cm length range. Females are more abundant and bigger than males in the catches.

### Greenland halibut

**Subareas 2 and Div. 3KLMNO:** Greenland halibut continues to be one of the main target species for the Spanish fleet in NAFO area. In 2014 Spanish catches were 4,137 tons; most of them have been taken in the Flemish Pass area (Div. 3LM) at depths more than 700 m. The mesh size used for this fishery was equal or greater than 130 mm. Table 17 shows the length distributions of Spanish catches by Division (3L, 3M and 3NO) and the total length distributions of Spanish catches in Divisions 3KLMNO. Most of the catches were in the 36-65 cm length range and the mode of the length distribution was in 48 cm. This length distribution is bigger than the 2013 where the mode was around 41 cm. Total age composition based in the commercial Spanish Age Length Key (Table 23), mean weight and mean length at age for Div. 3KLMNO are presented in Table 18. Most of the Greenland halibut catches corresponds to ages 5 to 8, with a peak at ages 6-7. This age catch age distribution is similar to the last years.

Figure 2 presents the Spanish fleet standardised CPUE updated with the 2014 data presented by Gonzalez-Costas and Gonzalez-Troncoso (2009). Results show two different levels in the CPUE: one between 1992-2006 and other 2007-2014. In the last period the CPUE has been variable between years but the mean level of this period was higher than the period 1992-2006.

### Thorny skate

Commercial catches of skates comprise a mix of skate species (*Raja radiata*, *Bathyraja spinicauda*, *Raja hyperborean*, *Raja senta*, etc). Thus the catch of skate in Table 1 refers to *Raja* spp. However, thorny skate dominates, comprising about 95% of the skate taken in the Spanish catches.

**Div. 3LNO:** Spanish skate catches in 2014 were 3,644 tons. Most of the catches were taken in Div. 3N at depths less than 200 meters, where a fishery directed to thorny skate took place using 280 mm mesh size. Skate catches in Div. 3L (15 tons) were much smaller than those in Div. 3NO and they were by-catch of the Greenland halibut fishery (130 mm cod-end). Table 19 shows the total catches length distributions by sex of Div. 3LNO, all catches length samples were with 280 mm mesh size and they were taken in Division 3NO. Most of the catches were in the 38-82 cm length range, similar to years before. It can be observed a clear different length between sexes, males are bigger than females.

**Div. 3M:** Skate catches in Div. 3M (29 tons) were much smaller than those in Div. 3NO and they were by-catch of the Greenland halibut, redfish and cod fisheries. There is not available catches length distributions for this species in Division 3M.

### **Roughhead grenadier**

**Subarea 2 and 3:** Roughhead grenadier is the main species taken as by-catch in the Greenland halibut fishery. Most of the 2014 catches and most of the length distribution samples were taken in Div. 3LM. Individuals were measured from tip of snout to base of first anal-fin ray (AFL) to the half centimetre below. Spanish catches in 2014 were 112 tons. Table 20 shows the AFL length distributions, grouping in 1 cm intervals, of Spanish catches for Div. 3LMNO. Most of the catches were in the 12-23 AFL length range, with a mode in 17 cm and a clear length difference between sexes, males are smaller than females.

Age distributions based on the Spanish commercial survey Age Length Key (Table 24), mean weight and mean length (AFL) at age of the total catch for Div. 3LMNO are presented in Table 21. Most of the Roughhead grenadier catches in 2014 were based on ages 5 to 13 with a mode in 8-9 years old.

### **White hake**

**Div. 3NO:** Catches in 2014 were slightly higher than in previous years. Catches of this species in 2014 in Div. 3NO (85 tons) were a small by-catch of different fisheries. In Division 3NO part of the catches (44 tons) were taken with the 280 mesh size. Catches in Div. 3NO take with 130 mm mesh size (41 tons) are by-catch of the redfish fishery. Table 22 shows the total catches length distributions by sex of Div. 3NO. There is only one length distribution sample for 280 mm mesh size and other for 130 mm mesh size. Most of the catches were in the 28-35 cm length range. In the catches, most of the individuals were females.

### **(B) Research studies**

The Spanish bottom trawl survey in NAFO Regulatory Area Div. 3NO was conducted from 2nd to 21st of June 2014 on board the R/V Vizconde de Eza. The gear was a Campelen otter trawl with 20 mm mesh size in the cod-end. A total of 122 valid hauls and 121 hydrographic stations were taken within a depth range of 45-1450 m according to a stratified random design. Furthermore, a stratified sampling by length class and sex was used to sample otoliths of Atlantic cod and Greenland halibut for growth studies. Gonads will be sampled from now on biennially, in odd years. The results of this survey, including biomass indices with their errors and length distributions, as well as the calculated biomass based on conversion of length frequencies for Greenland halibut, American plaice, Atlantic cod, yellowtail flounder, redfish, witch flounder, roughhead grenadier, thorny skate and white hake are presented as Scientific Council Research Documents. In addition, age distributions are presented for Greenland halibut and Atlantic cod.

In 2003 it was decided to extend the Spanish 3NO survey toward Div. 3L (Flemish Pass). In 2014, the bottom trawl survey in Flemish Pass (Div. 3L) was carry out on board R/V Vizconde de Eza using the usual survey gear (Campelen 1800) from July 30th to August 19th. The area surveyed was Flemish Pass to depths up 800 fathoms (1463 m) following the same procedure as in previous years. The number of hauls was 102 and 3 of them were nulls. Survey results, including abundance indices and length distributions of the main commercial species, are presented as Scientific Council Research documents. Survey results for Div. 3LNO of the northern shrimp (*Pandalus borealis*) were presented in SCR 14/047. Samples for histological (Greenland halibut, American plaice, roughhead grenadier) and aging (Greenland halibut, American plaice, roughhead grenadier and cod) studies were taken. Feeding studies on demersal species were performed and 2036 stomach contents were analysed in depths of 104 to 1396 m. Ninety-eight hydrographic profile samplings were made in a depth range of 101-1354 m.

The EU bottom trawl survey in Flemish Cap (Div. 3M) was carried out on board R/V Vizconde de Eza using the usual survey gear (Lofoten) from June 25th to July 23th 2014. The area surveyed was Flemish Cap Bank to depths up to 800 fathoms (1460 m) following the same procedure as in previous years. The number of hauls was 183 and two of them were nulls. Survey results including abundance indices of the main commercial species and age distributions for cod, redfish, American plaice, roughhead grenadier and Greenland halibut are presented as Scientific Council Research documents. Flemish Cap survey results for northern shrimp (*Pandalus borealis*) were presented in SCR 14/049. Samples for histological assessment of sexual maturity of cod, redfish, Greenland halibut and roughhead grenadier were taken. Oceanography studies continued to take place.

#### NEREIDA Project:

New data on deep-water corals and sponges were presented based on Spanish/EU bottom trawl groundfish surveys for 2014 in order to make these data available to the NAFO WGESA and improve the mapping of sensitive species in the NAFO Regulatory area (Divs. 3LMNO).

“Significant” catches (according to the NAFO definition from groundfish surveys) of deep-water corals and sponges were provided and mapped together with the closed areas. A total number of 411 bottom trawl hauls surveys were analyzed. Distribution maps of presence and catches above threshold for RV data of sponges, large gorgonians, small gorgonians and sea pens following the thresholds were presented.

Sponges were recorded in 198 of the total tows (48% of the total Spain/UE tows analyzed). Catches above the identification threshold for RV data ( $\geq 75$  kg/tow) were found in 8 tows. Of the total 8 tows, only 1 was recorded outside of the closed areas. Large gorgonians were recorded in 4 tows (1% of the total tows analyzed). One catch above the identification threshold for RV data ( $> 0.6$  kg/tow) was found with a weight of 34.3 kg; small gorgonians were recorded in 39 tows (9% of the total tows analyzed). No catches above the identification threshold for RV data ( $> 0.15$  kg/tow) were recorded and finally, sea pens were recorded in 151 tows (37 % of the total tows analyzed). Catches above the identification threshold for RV data ( $> 1.4$  kg/tow) were found in 2 tows located inside closed areas 9 and 10.

In addition, and as part of the NEREIDA project, biological samples collected using mega box-core were analyzed and processed for the extraction and identification of benthic fauna. Analysis of the extracted data revealed the presence of benthic assemblages that were indicative of Vulnerable Marine Ecosystems (VME). VME indicative assemblages were present mostly outside of the fishing footprint in the area of study. A simple habitat suitability model has been performed to ascertain areas that are likely to accommodate VME indicative assemblages. Areas with the greatest potential to accommodate VME assemblages closely correspond with areas already managed for the protection of VME, where bottom-contact fishing practices are presently excluded.

## **SUBAREA 6**

### **A. Status of the fisheries**

Two Spanish trawler operated in NAFO Regulatory Area, Div. 6G using a midwater trawl gear, during 2014, amounting to 15 days (117 hours) of fishing effort. The most important species in catches was the *Beryx splendens*. Other species present in catches were *Ruvettus pretiosus* (Table 1).

There were not available Spanish catches length distribution in Division 6G.

### REFERENCES

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Table 1. Spanish Catches (tons) in NAFO Area in 2014 by species and Division, based on the Logbook data.

Code	English_name	Scientific_name	Provisional STATLANT 21A					Total
			3L	3M	3N	3O	6G	
GHL	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	2751	688	698			4137
SKA	Raja rays nei	<i>Raja spp</i>	15	29	2643	987		3674
RED	Atlantic redfishes nei	<i>Sebastes spp</i>	236	1031	152	932		2351
COD	Atlantic cod	<i>Gadus morhua</i>	16	2099	134	70		2319
PLA	American plaice	<i>Hippoglossoides platessoides</i>	35	69	151	63		318
WIT	Witch flounder	<i>Glyptocephalus cynoglossus</i>	26	89	91	61		266
YEL	Yellowtail flounder	<i>Limanda ferruginea</i>	3		224	32		259
ANG	American angler	<i>Lophius americanus</i>			29	128		158
BYS	Splendid alfonsino	<i>Beryx splendens</i>					118	118
RHG	Roughhead grenadier	<i>Macrourus berglax</i>	41	49	23			112
HKS	Silver hake	<i>Merluccius bilinearis</i>			1	96		97
HAD	Haddock	<i>Melanogrammus aeglefinus</i>		11	17	65		93
HAL	Atlantic halibut	<i>Hippoglossus hippoglossus</i>	6	7	42	36		90
HKW	White hake	<i>Urophycis tenuis</i>		5	6	79		90
PRA	Northern prawn	<i>Pandalus borealis</i>	76					76
RNG	Roundnose grenadier	<i>Coryphaenoides rupestris</i>	30	33	13			76
DGX	Dogfish sharks nei	<i>Squalidae</i>	9	16	6			30
CAT	Wolffishes(=Catfishes) nei	<i>Anarhichas spp</i>	15	8	7	0		30
HKR	Red hake	<i>Urophycis chuss</i>	7	2	5			14
OIL	Oilfish	<i>Ruvettus pretiosus</i>					4	4
GPE	Longfin hake	<i>Phycis chesteri</i>	2	1				2
GDE	Threadfin rockling	<i>Gaidropsarus ensis</i>	2	0				2
Total tons			3268	4135	4242	2550	123	14318

Table 2. Samples and individuals sampled by the IEO Scientific Observers by species, mesh size and NAFO Division in 2014.

Code	Species	English_name	Catch/Disc.	Division	Mesh size	Samples	Ind.
ANT	<i>Antimora rostrata</i>	Blue antimora	C	3L	130 mm	4	217
ANT	<i>Antimora rostrata</i>	Blue antimora	C	3M	130 mm	5	708
ANT	<i>Antimora rostrata</i>	Blue antimora	C	3N	130 mm	4	152
ARU	<i>Argentina silus</i>	Blue antimora	C	3N	130 mm	1	23
CFB	<i>Centroscyllium fabricii</i>	Black dogfish	C	3N	130 mm	1	12
CFB	<i>Centroscyllium fabricii</i>	Black dogfish	D	3N	130 mm	3	132
RNG	<i>Coryphaenoides rupestris</i>	Roundnose grenadier	C	3L	130 mm	6	821
RNG	<i>Coryphaenoides rupestris</i>	Roundnose grenadier	C	3M	130 mm	4	691
RNG	<i>Coryphaenoides rupestris</i>	Roundnose grenadier	D	3M	130 mm	1	79
RNG	<i>Coryphaenoides rupestris</i>	Roundnose grenadier	C	3N	130 mm	4	133
COD	<i>Gadus morhua</i>	Greater argentine	C	3M	130 mm	47	7071
COD	<i>Gadus morhua</i>	Cod	C	3M	130 mm	9	751
COD	<i>Gadus morhua</i>	Cod	D	3M	130 mm	11	1184
COD	<i>Gadus morhua</i>	Cod	D	3M	130 mm	7	796
COD	<i>Gadus morhua</i>	Cod	C	3N	130 mm	3	382
COD	<i>Gadus morhua</i>	Cod	C	3N	280 mm	7	421
COD	<i>Gadus morhua</i>	Cod	D	3N	280 mm	1	112
COD	<i>Gadus morhua</i>	Cod	C	3O	130 mm	1	72
COD	<i>Gadus morhua</i>	Cod	C	3O	280 mm	6	374
COD	<i>Gadus morhua</i>	Cod	D	3O	280 mm	1	68
GDE	<i>Gaidropsarus ensis</i>	Threadfin rockling	C	3L	130 mm	2	46
GDE	<i>Gaidropsarus ensis</i>	Threadfin rockling	C	3N	130 mm	2	21
WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	C	3L	130 mm	1	136
WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	D	3L	130 mm	2	223



WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	C	3M	130 mm	1	31
WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	C	3N	130 mm	2	164
WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	C	3O	130 mm	2	227
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3L	130 mm	3	317
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3M	130 mm	1	38
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3N	280 mm	15	1337
PLA	<i>Hippoglossoides platessoides</i>	American plaice	D	3N	280 mm	11	1022
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3O	130 mm	3	337
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3O	280 mm	3	230
PLA	<i>Hippoglossoides platessoides</i>	American plaice	D	3O	280 mm	10	1078
YEL	<i>Limanda ferruginea</i>	Yellowtail flounder	C	3N	280 mm	17	1771
YEL	<i>Limanda ferruginea</i>	Yellowtail flounder	D	3N	280 mm	24	2775
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3L	130 mm	18	2415
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	D	3L	130 mm	1	41
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3M	130 mm	10	1206
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3N	130 mm	13	1094
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	D	3N	130 mm	5	353
HKS	<i>Merluccius bilinearis</i>	Silver hake	C	3N	130 mm	1	45
HKS	<i>Merluccius bilinearis</i>	Silver hake	C	3O	130 mm	3	171
WHB	<i>Micromesistius poutassou</i>	Blue whiting(=Poutassou)	C	3M	130 mm	2	18
MXO	<i>Myoxocephalus octodecemspinosus</i>	Longhorn sculpin	C	3N	280 mm	1	21
NZB	<i>Nezumia bairdi</i>	Marlin-spike grenadier	C	3L	130 mm	3	179
NZB	<i>Nezumia bairdi</i>	Marlin-spike grenadier	C	3M	130 mm	1	29
NZB	<i>Nezumia bairdi</i>	Marlin-spike grenadier	C	3N	130 mm	5	264
RJG	<i>Raja hyperborea</i>	Arctic skate	D	3N	130 mm	1	2
RJR	<i>Raja radiata</i>	Starry ray	C	3N	280 mm	31	2964

RJR	<i>Raja radiata</i>	Starry ray	D	3N	280 mm	18	1671
RJR	<i>Raja radiata</i>	Starry ray	C	3O	280 mm	13	989
RJR	<i>Raja radiata</i>	Starry ray	D	3O	280 mm	2	165
RJS	<i>Raja senta</i>	Smooth skate	C	3O	280 mm	1	11
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3L	130 mm	57	8984
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3M	130 mm	35	4960
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3N	130 mm	40	4389
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	D	3N	130 mm	3	21
RED	<i>Sebastes spp</i>	Redfish	C	3L	130 mm	4	532
RED	<i>Sebastes spp</i>	Redfish	D	3L	130 mm	2	189
RED	<i>Sebastes spp</i>	Redfish	C	3M	130 mm	26	3152
RED	<i>Sebastes spp</i>	Redfish	C	3M	130 mm	18	2447
RED	<i>Sebastes spp</i>	Redfish	D	3M	130 mm	5	601
RED	<i>Sebastes spp</i>	Redfish	D	3M	130 mm	2	136
RED	<i>Sebastes spp</i>	Redfish	C	3N	130 mm	7	839
RED	<i>Sebastes spp</i>	Redfish	C	3N	280 mm	2	298
RED	<i>Sebastes spp</i>	Redfish	C	3O	130 mm	10	1027
RED	<i>Sebastes spp</i>	Redfish	C	3O	280 mm	10	1552
RED	<i>Sebastes spp</i>	Redfish	D	3O	280 mm	1	100
HKW	<i>Urophycis tenuis</i>	White hake	C	3O	130 mm	1	60
HKW	<i>Urophycis tenuis</i>	White hake	C	3O	280 mm	1	108
HKW	<i>Urophycis tenuis</i>	White hake	D	3O	280 mm	4	452

Table 3. Fishing effort (hours) of the Spanish fleet in Divisions 3LMNO by year based on the Logbook data.

<b>3LMNO</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Effort (Hours)	10682 1	7602 8	6012 8	4404 4	2516 3	2140 8	2125 0	2270 3	2527 6	2541 0	1860 2	1827 1

Table 4. Fishing effort (hours) of the Spanish fleet in 2014, by quarter, depth strata and Division, as well as percentage of effort by quarter and Division based on the Logbook data.

<b>Division</b>	<b>units</b>	<b>1st Q</b>	<b>2nd Q</b>	<b>3rd Q</b>	<b>4th Q</b>	<b>Total</b>	<b>% Div.</b>
<b>3L</b>	<b>&lt;200</b>	7				0%	
	<b>200-600</b>	180				5%	
	<b>&gt;600</b>	2925	1314	619	1269	95%	
	<b>Total</b>	<b>2925</b>	<b>1501</b>	<b>760</b>	<b>1274</b>	<b>6460</b>	<b>35%</b>
<b>3M</b>	<b>&lt;200</b>	3	31	33	84	4%	
	<b>200-600</b>	493	704	676	36	50%	
	<b>&gt;600</b>	908	544	282	47	46%	
	<b>Total</b>	<b>1404</b>	<b>1279</b>	<b>991</b>	<b>167</b>	<b>3841</b>	<b>21%</b>
<b>3N</b>	<b>&lt;200</b>	534	1039	956	1278	65%	
	<b>200-600</b>	12	28	83	57	3%	
	<b>&gt;600</b>	414	500	698	233	32%	
	<b>Total</b>	<b>960</b>	<b>1567</b>	<b>1737</b>	<b>1568</b>	<b>5832</b>	<b>32%</b>
<b>3O</b>	<b>&lt;200</b>	513	982	58	177	81%	
	<b>200-600</b>	134	29	91	140	18%	
	<b>&gt;600</b>	14				1%	
	<b>Total</b>	<b>661</b>	<b>1011</b>	<b>149</b>	<b>317</b>	<b>2138</b>	<b>12%</b>
<b>Total Hours</b>		5950	5358	3637	3326	18271	100%
<b>%</b>		33%	29%	20%	18%	100%	

Table 5-. Percentage of the 2014 Spanish effort in SA 3 by mesh size, quarter and Division based on the NAFO Observers data.

Div.	Mesh Size	1st Q	2nd Q	3rd Q	4th Q	Total
3L	<90 mm		12%			3%
	100-200 mm	100%	87%	98%	100%	97%
	>200 mm		1%	2%		0%
3M	<90 mm					
	100-200 mm	100%	100%	100%	100%	100%
	>200 mm					
3N	<90 mm					
	100-200 mm	47%	90%	70%	49%	57%
	>200 mm	53%	10%	30%	51%	43%
3O	<90 mm					
	100-200 mm	22%	66%	82%	49%	51%
	>200 mm	78%	34%	18%	51%	49%

Table 6. Parameters of the length-weight relationship ( $W(g) = a \cdot L(cm)^b$ ) by species.

Species	Source	a	b
Greenland halibut	FC Survey	0.003245	3.2388
Redfish 3O - 3LN	3NO Survey	0.0113324	3.046423
Redfish 3M	FC Survey	0.0181	2.957
Roughhead grenadier	FC Survey	0.125955	2.8646
Witch flounder	3NO Survey	0.0021713	3.3050995
American plaice	3NO Survey	0.0045925	3.190851
Cod 3NO	3NO Survey	0.0043385	3.1627584
Cod 3M	FC Survey	0.007406	3.0513
Yellowtail Flounder	3NO Survey	0.0162421	2.8239696
Skate	3NO Survey	0.0121845	2.9452498
White Hake	3NO Survey	0.0131989	2.8593388

Table 7. Length distribution of 3NO Spanish Cod catches.

<b>Cod</b>	<b>Division 3NO</b>			
<b>Length (cm)</b>	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	<b>Total</b>
23	0	28	0	28
24	0	0	0	0
25	57	28	0	85
26	108	0	0	108
27	68	28	0	96
28	0	83	0	83
29	28	654	0	683
30	0	0	0	0
31	85	756	0	841
32	231	2008	0	2238
33	2043	1388	0	3431
34	740	2725	0	3465
35	3359	1995	0	5355
36	2043	776	0	2819
37	1498	2018	0	3516
38	3431	1555	0	4985
39	783	2869	0	3652
40	2696	2091	0	4787
41	212	1475	0	1687
42	736	924	0	1660
43	706	1508	0	2213
44	909	799	0	1708
45	139	399	0	538
46	2105	402	0	2507
47	301	799	0	1100
48	813	148	0	962
49	382	735	0	1116
50	787	347	0	1133
51	93	492	0	585
52	780	402	0	1182
53	1098	462	0	1559
54	332	422	0	753
55	467	965	0	1432
56	491	790	0	1281
57	465	1213	0	1677
58	408	1438	0	1846
59	1011	423	0	1433
60	334	619	0	953
61	478	795	0	1272
62	414	517	0	931
63	520	649	0	1169
64	370	609	0	980
65	314	940	0	1254
66	395	697	0	1092
67	590	530	0	1120
68	307	281	0	588

69	376	463	0	839
70	805	686	0	1491
71	584	445	0	1029
72	364	814	0	1177
73	336	385	0	721
74	1086	384	0	1470
75	420	387	0	807
76	608	393	0	1001
77	889	577	0	1465
78	218	313	0	531
79	879	632	0	1511
80	427	461	0	888
81	775	867	0	1641
82	76	253	0	329
83	332	393	0	725
84	155	277	0	432
85	137	73	0	210
86	197	102	0	298
87	183	751	0	934
88	140	57	0	196
89	650	1218	0	1868
90	1306	154	0	1461
91	145	16	0	161
92	103	672	0	775
93	748	103	0	851
94	562	73	0	636
95	27	73	0	101
96	0	1156	0	1156
97	0	0	0	0
98	562	0	0	562
99	0	0	0	0
100	0	9	0	9
101	598	0	0	598
102	0	94	0	94
103	0	0	0	0
104	562	0	0	562
105	0	0	0	0
106	0	0	0	0
107	0	0	0	0
108	0	0	0	0
109	0	0	0	0
110	571	0	0	571
Total	47945	51059	0	99004

Samples	17
Ind. Sampled	1249
Catch (ton)	204
SOP	0.98

Table 8. Length distribution of 3M Spanish Cod catches.

<b>Cod Length (cm)</b>	<b>Division 3M</b>			<b>Total</b>
	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	
<b>17</b>	0	117	769	886
<b>18</b>	234	117	769	1119
<b>19</b>	0	0	0	0
<b>20</b>	117	117	1538	1771
<b>21</b>	0	0	0	0
<b>22</b>	234	0	0	234
<b>23</b>	350	0	0	350
<b>24</b>	350	467	0	817
<b>25</b>	467	234	0	701
<b>26</b>	350	467	0	817
<b>27</b>	350	584	0	934
<b>28</b>	467	1063	0	1530
<b>29</b>	584	647	0	1231
<b>30</b>	680	893	0	1573
<b>31</b>	385	1295	0	1681
<b>32</b>	1283	593	0	1876
<b>33</b>	1321	631	0	1952
<b>34</b>	1143	600	0	1743
<b>35</b>	1145	1262	0	2407
<b>36</b>	341	1516	0	1857
<b>37</b>	1658	87	0	1745
<b>38</b>	1911	600	0	2511
<b>39</b>	2486	4109	0	6595
<b>40</b>	6433	4736	0	11170
<b>41</b>	3157	3227	0	6384
<b>42</b>	7548	3190	0	10738
<b>43</b>	7162	4167	0	11329
<b>44</b>	11115	7836	0	18951
<b>45</b>	11070	6884	0	17954
<b>46</b>	13032	11478	0	24510
<b>47</b>	18892	10453	0	29346
<b>48</b>	18895	10025	0	28919
<b>49</b>	17409	9533	0	26942
<b>50</b>	19250	14320	0	33570
<b>51</b>	20665	13085	0	33750
<b>52</b>	20667	20911	0	41578
<b>53</b>	18457	16393	0	34850
<b>54</b>	19801	16073	0	35874
<b>55</b>	16539	17320	0	33859
<b>56</b>	16202	13108	0	29309
<b>57</b>	15301	13156	0	28457
<b>58</b>	17278	11556	0	28835
<b>59</b>	14287	10729	0	25016
<b>60</b>	16247	14356	0	30603

<b>61</b>	13460	10213	0	23673
<b>62</b>	11287	10960	0	22247
<b>63</b>	14010	9114	0	23125
<b>64</b>	13556	11277	0	24834
<b>65</b>	11781	10813	0	22594
<b>66</b>	9763	9171	0	18934
<b>67</b>	11048	9299	0	20347
<b>68</b>	11090	8814	0	19904
<b>69</b>	10550	12062	0	22611
<b>70</b>	7590	9068	0	16658
<b>71</b>	5067	7197	0	12265
<b>72</b>	7144	5553	0	12698
<b>73</b>	6128	5137	0	11265
<b>74</b>	7788	6866	0	14654
<b>75</b>	6044	8879	0	14923
<b>76</b>	4995	8026	0	13021
<b>77</b>	8050	7675	0	15724
<b>78</b>	5525	5527	0	11052
<b>79</b>	4844	6028	0	10872
<b>80</b>	3417	4891	0	8308
<b>81</b>	3525	4252	0	7778
<b>82</b>	3019	3656	0	6675
<b>83</b>	2272	3034	0	5306
<b>84</b>	2397	3517	0	5914
<b>85</b>	2983	4592	0	7576
<b>86</b>	2714	5475	0	8189
<b>87</b>	2705	3979	0	6685
<b>88</b>	2150	3658	0	5808
<b>89</b>	1673	4560	0	6234
<b>90</b>	1815	2518	0	4334
<b>91</b>	1690	1477	0	3167
<b>92</b>	1710	1865	0	3575
<b>93</b>	1149	1218	0	2367
<b>94</b>	994	1339	0	2332
<b>95</b>	485	2062	0	2547
<b>96</b>	1106	2263	0	3369
<b>97</b>	1037	1271	0	2308
<b>98</b>	1104	2271	0	3375
<b>99</b>	632	1158	0	1790
<b>100</b>	893	981	0	1874
<b>101</b>	120	214	0	334
<b>102</b>	87	295	0	382
<b>103</b>	323	199	0	522
<b>104</b>	201	296	0	497
<b>105</b>	133	298	0	431
<b>106</b>	42	164	0	206
<b>107</b>	0	42	0	42
<b>108</b>	0	0	0	0



<b>109</b>	0	23	0	23
<b>110</b>	0	260	0	260
<b>111</b>	0	0	0	0
<b>112</b>	0	0	0	0
<b>113</b>	0	0	0	0
<b>114</b>	0	0	0	0
<b>115</b>	0	0	0	0
<b>116</b>	0	23	0	23
<b>Total</b>	535361	471468	3075	1009904
<b>Samples</b>				56
<b>Ind. Sampled</b>				7822
<b>Catch (tons)</b>				2099
<b>SOP</b>				0.87

Table 8 (Cont.). Ageh distribution of 3M Spanish Cod 2014 catches.

<b>Age</b>	<b>3M Cod catches Age Distribution</b>		
	<b>Abundance</b>	<b>MW (gr)</b>	<b>ML (cm)</b>
<b>1</b>	4842	86	21.3
<b>2</b>	1853	145	25.5
<b>3</b>	18226	348	33.5
<b>4</b>	72367	783	44.0
<b>5</b>	432526	1367	52.7
<b>6</b>	226648	2518	64.4
<b>7</b>	115385	3730	73.3
<b>8</b>	102081	4917	80.1
<b>9</b>	30399	7194	91.1
<b>10</b>	5412	8873	97.9
<b>11</b>	141	11311	106.2
<b>12</b>	23	14559	115.5

Table 9. Redfish 3M stock Spanish catches length distribution.

Redfish Length (cm)	Division 3M			Total
	Males	Females	Ind.	
16	724	0	0	724
17	6882	4519	0	11400
18	7369	8989	0	16358
19	7956	3774	0	11730
20	19096	12445	0	31541
21	21219	27774	0	48993
22	20519	16501	0	37020
23	70488	43508	0	113997
24	99063	71118	0	170181
25	214691	151146	0	365837
26	326499	256439	0	582937
27	244737	359248	0	603985
28	108306	289844	0	398150
29	44871	177335	0	222206
30	41425	99962	0	141387
31	32372	81467	0	113839
32	35642	38125	0	73767
33	31259	23431	0	54690
34	37119	22535	0	59653
35	30394	29160	0	59554
36	16943	18724	0	35667
37	19135	25063	0	44197
38	13878	17476	0	31354
39	3083	14967	0	18050
40	710	16044	0	16754
41	1055	10705	0	11760
42	109	6580	0	6689
43	111	6132	0	6243
44	119	2421	0	2540
45	25	570	0	594
46	62	321	0	383
47	13	139	0	151
48	0	223	0	223
49	13	82	0	95
50	0	111	0	111
51	0	13	0	13
52	0	63	0	63
53	0	96	0	96
54	0	13	0	13
<b>Total</b>	1455886	1837062	0	3292948
<b>Samples</b>				44
<b>Ind. Sampled</b>				5599
<b>Catch (tons)</b>				1031
<b>SOP</b>				0.85

Table 10. Redfish 3LN stock Spanish catches length distribution.

Redfish Length (cm)	Division 3LN			Total
	Males	Females	Ind.	
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	298	0	0	298
16	0	0	0	0
17	893	298	0	1190
18	595	1595	0	2190
19	4441	2420	0	6861
20	15371	3186	0	18558
21	36136	6588	0	42724
22	128257	17642	0	145899
23	87865	78229	0	166094
24	78717	109316	0	188033
25	61663	145121	0	206785
26	42712	132463	0	175176
27	46148	106076	0	152224
28	17547	82703	0	100250
29	6709	53120	0	59829
30	4369	56150	0	60519
31	4287	30931	0	35218
32	10116	11398	0	21514
33	6328	9222	0	15550
34	7449	9672	0	17121
35	6294	4627	0	10920
36	1842	6482	0	8323
37	872	3761	1328	5961
38	97	2123	0	2220
39	97	1522	0	1619
40	0	2672	0	2672
41	0	97	0	97
42	0	0	0	0
43	0	0	0	0
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	672	0	672
Total	569104	878084	1328	1448517
Samples				13
Ind. Sampled				1669
Catch (tons)				388
SOP				1.07

Table 11. Redfish 30 stock Spanish catches length distribution.

<b>Redfish Length (cm)</b>	<b>Males</b>	<b>30 Females</b>	<b>Ind.</b>	<b>Total</b>
<b>10</b>	0	0	0	0
<b>11</b>	0	0	0	0
<b>12</b>	0	0	0	0
<b>13</b>	842	0	0	842
<b>14</b>	0	0	0	0
<b>15</b>	0	0	0	0
<b>16</b>	1066	842	0	1908
<b>17</b>	7687	9781	0	17468
<b>18</b>	82108	34572	0	116680
<b>19</b>	159734	150249	0	309983
<b>20</b>	459341	296144	0	755485
<b>21</b>	690665	549822	0	1240487
<b>22</b>	554027	880685	0	1434712
<b>23</b>	314597	675029	0	989625
<b>24</b>	95927	469154	0	565080
<b>25</b>	106755	151763	0	258517
<b>26</b>	46784	99563	0	146347
<b>27</b>	6622	69280	0	75902
<b>28</b>	0	32475	0	32475
<b>29</b>	0	17142	0	17142
<b>30</b>	0	10471	0	10471
<b>31</b>	0	4400	0	4400
<b>32</b>	0	2901	0	2901
<b>33</b>	0	0	0	0
<b>34</b>	0	0	0	0
<b>35</b>	0	0	0	0
<b>36</b>	0	1402	0	1402
<b>37</b>	0	0	0	0
<b>38</b>	0	0	0	0
<b>39</b>	0	0	0	0
<b>40</b>	0	0	0	0
<b>Total</b>	2526153	3455675	0	5981828
<b>Samples</b>				20
<b>Ind. Sampled</b>				2579
<b>Catch (tons)</b>				932
<b>SOP</b>				1.02

Table 12. American plaice 3LNO stock Spanish catches length distribution.

<b>American Plaice Length (cm)</b>	<b>Males</b>	<b>Division 3LNO Females</b>	<b>Ind.</b>	<b>Total</b>
20	0	0	0	0
21	166	193	0	359
22	396	791	0	1187
23	0	802	0	802
24	852	1362	0	2214
25	1762	866	0	2628
26	4959	2603	0	7563
27	8233	6886	0	15119
28	11122	5202	0	16324
29	19848	6790	0	26638
30	16647	12201	0	28849
31	17559	12830	0	30389
32	14325	12991	0	27316
33	10864	13372	0	24237
34	12975	12735	0	25710
35	6501	19485	0	25986
36	5574	14962	0	20536
37	3982	12314	0	16296
38	1292	15575	0	16867
39	347	12517	0	12864
40	645	11812	0	12458
41	198	11174	0	11372
42	0	9530	0	9530
43	0	8062	0	8062
44	0	9628	0	9628
45	0	7582	0	7582
46	0	7472	0	7472
47	202	4637	0	4839
48	0	3767	0	3767
49	0	4531	0	4531
50	0	5890	0	5890
51	0	5695	0	5695
52	0	4737	0	4737
53	0	2379	0	2379
54	0	3957	0	3957
55	0	2452	0	2452
56	0	4369	0	4369
57	0	4718	0	4718
58	0	4433	0	4433
59	0	1213	0	1213
60	0	4282	0	4282
61	0	3523	0	3523
62	0	2327	0	2327
63	0	1014	0	1014
64	0	1041	0	1041
65	135	1022	0	1158

<b>66</b>	0	702	0	702
<b>67</b>	0	410	0	410
<b>68</b>	0	5	0	5
<b>69</b>	0	16	0	16
<b>70</b>	0	0	0	0
<b>Total</b>	138584	296859	0	435442

<b>Samples</b>	24
<b>Ind. Sampled</b>	2221
<b>Catch (tons)</b>	249
<b>SOP</b>	0.94

Table 13. American plaice 3M Spanish catches length distribution.

American Plaice Length (cm)	Division 3M			Total
	Males	Females	Ind.	
22	3291	0	3291	6581
23	6581	6581	0	13162
24	0	6581	0	6581
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	9872	6581	0	16453
30	3291	0	0	3291
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	3291	0	0	3291
36	0	0	0	0
37	0	0	0	0
38	3291	0	0	3291
39	6581	0	0	6581
40	3291	0	0	3291
41	6581	0	0	6581
42	3291	0	0	3291
43	3291	3291	0	6581
44	6581	3291	0	9872
45	3291	3291	0	6581
46	0	3291	0	3291
47	0	6581	0	6581
48	0	9872	0	9872
49	0	0	0	0
50	0	3291	0	3291
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
56	0	0	0	0
57	0	0	0	0
58	0	3291	0	3291
59	0	3291	0	3291
Total	62521	59230	3291	125042
Samples				1
Ind. Sampled				38
Catch (tons)				69
SOP				0.74

Table 14. Witch flounder Spanish catches length distribution for Div. 3L.

<b>Witch flounder</b>	<b>3L</b>			
<b>Length (cm)</b>	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	<b>Total</b>
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	1045	0	0	1045
29	2089	3134	0	5223
30	2089	5223	0	7312
31	5223	5223	0	10445
32	5745	5223	0	10967
33	8878	4178	0	13056
34	2611	4700	0	7312
35	4178	2611	0	6789
36	1567	2089	0	3656
37	1045	0	0	1045
38	0	0	0	0
39	0	0	0	0
40	522	0	0	522
41	522	0	0	522
42	0	522	0	522
43	0	522	0	522
44	0	0	0	0
45	0	0	0	0
46	0	522	0	522
47	0	1045	0	1045
48	0	522	0	522
49	0	0	0	0
<b>Total</b>	35513	35513	0	71027
<b>Samples</b>				1
<b>Ind. Sampled</b>				136
<b>Catch (tons)</b>				26
<b>SOP</b>				1.37



Table 15. Witch flounder Spanish catches length distribution for Div. 3NO.

<b>Witch flounder</b>		<b>3NO</b>			
<b>Length (cm)</b>	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	<b>Total</b>	
<b>30</b>	297	0	0	297	
<b>31</b>	0	1114	0	1114	
<b>32</b>	1866	2683	0	4549	
<b>33</b>	3277	6620	0	9897	
<b>34</b>	6694	5506	0	12200	
<b>35</b>	4549	9395	0	13944	
<b>36</b>	8049	8160	0	16209	
<b>37</b>	5180	7342	0	12522	
<b>38</b>	9080	8090	0	17170	
<b>39</b>	13017	12357	0	25374	
<b>40</b>	4974	18348	0	23323	
<b>41</b>	8643	25955	0	34598	
<b>42</b>	6246	10623	0	16869	
<b>43</b>	6543	18144	0	24687	
<b>44</b>	3768	19933	0	23701	
<b>45</b>	2526	16817	0	19343	
<b>46</b>	1569	13096	0	14664	
<b>47</b>	1569	3654	0	5223	
<b>48</b>	0	2268	0	2268	
<b>49</b>	1569	9075	0	10643	
<b>50</b>	0	513	0	513	
<b>51</b>	0	1569	0	1569	
<b>52</b>	0	128	0	128	
<b>53</b>	0	128	0	128	
<b>54</b>	0	128	0	128	
<b>Total</b>	89415	201645	0	291060	
					<b>Samples</b>
					4
					<b>Ind. Sampled</b>
					391
					<b>Catch (tons)</b>
					152
					<b>SOP</b>
					1.07

Table 16. Yellowtail flounder Spanish catches length distribution for Div. 3LNO.

Yellowtail flounder Length (cm)	3LNO			Total
	Males	Females	Ind.	
19	0	1294	90	1385
20	195	0	0	195
21	0	45	0	45
22	0	0	0	0
23	240	180	0	421
24	846	2309	0	3155
25	1912	5714	0	7626
26	2464	5474	0	7938
27	9311	9167	0	18478
28	14938	10973	0	25911
29	33369	18292	0	51661
30	37019	31265	0	68284
31	43724	45982	0	89706
32	33959	45516	0	79475
33	17601	40797	0	58398
34	18151	56000	0	74151
35	10816	54916	0	65732
36	4279	34700	0	38979
37	2559	39117	0	41676
38	1025	32872	0	33898
39	441	31158	0	31599
40	90	26452	0	26542
41	0	8157	0	8157
42	0	8290	0	8290
43	0	9708	0	9708
44	0	5018	0	5018
45	0	1591	0	1591
46	0	4265	0	4265
47	0	21	0	21
48	0	1289	0	1289
49	0	0	0	0
50	0	11	0	11
51	0	0	0	0
52	0	0	0	0
53	0	108	0	108
<b>Total</b>	<b>232941</b>	<b>530681</b>	<b>90</b>	<b>763712</b>
<b>Samples</b>				<b>17</b>
<b>Ind. Sampled</b>				<b>1771</b>
<b>Catch (tons)</b>				<b>259</b>
<b>SOP</b>				<b>0.96</b>

Table 17. Greenland halibut Spanish catches length distribution for Div. 3L and 3M.

Length (cm)	Division 3L					Division 3M			
	Males	Females	Ind.	Total		Males	Females	Ind.	Total
20	0	0	0	0		0	0	0	0
21	0	0	0	0		0	0	0	0
22	0	0	0	0		0	0	0	0
23	0	0	0	0		0	0	0	0
24	0	301	0	301		0	0	0	0
25	0	0	0	0		0	0	0	0
26	0	0	0	0		0	0	0	0
27	0	0	0	0		0	0	0	0
28	0	448	0	448		0	0	0	0
29	0	429	0	429		0	0	0	0
30	0	0	0	0		170	0	79	249
31	0	728	328	1056		0	410	0	410
32	543	448	332	1323		0	77	90	166
33	441	846	301	1588		77	1327	0	1404
34	2640	660	1201	4501		450	282	216	948
35	2561	2779	3054	8394		903	1754	139	2796
36	6382	2031	4594	13006		2778	2356	166	5300
37	4798	7849	6274	18920		1811	1046	584	3442
38	9899	13971	14491	38361		3845	3035	1335	8215
39	15826	19823	28321	63970		5417	4667	1404	11489
40	16753	30476	28264	75493		6401	7144	2760	16305
41	24725	32142	42043	98910		6975	6334	2266	15574
42	28514	37633	48478	114626		9685	6758	4543	20986
43	28652	43031	49001	120683		8445	10503	4375	23323
44	19925	53309	56264	129498		11562	11166	5201	27928
45	25165	50276	60959	136400		11003	19944	6332	37278
46	25054	55141	67317	147512		12462	20904	6059	39425
47	22680	70053	68407	161140		13084	23233	1736	38053
48	20735	74893	72908	168537		11788	27015	2743	41546
49	19988	80429	67140	167558		12012	24702	2140	38853
50	16698	89232	66441	172371		10346	28592	1982	40920
51	27418	122853	1137	151408		10282	27051	79	37412
52	19857	137104	294	157255		7080	26011	0	33091
53	18117	101622	0	119739		7072	21957	0	29029
54	13317	101277	0	114593		4455	18345	0	22800
55	9448	70452	0	79900		2888	18077	0	20964
56	7175	61532	0	68706		2390	13193	0	15583
57	3138	47584	0	50722		1506	11065	0	12571
58	2308	37325	0	39634		1543	10596	0	12139
59	2429	36967	0	39396		1441	11132	0	12573
60	728	24403	0	25131		522	8572	0	9094
61	565	19832	0	20398		218	6919	0	7137
62	488	17914	0	18402		336	7429	0	7765
63	162	12786	0	12948		128	5377	0	5505
64	0	16011	0	16011		359	3629	0	3988
65	0	9970	0	9970		119	5317	0	5436

66	237	9332	0	9569		0	4955	0	4955
67	0	7404	0	7404		60	2592	0	2652
68	0	6820	0	6820		0	2322	0	2322
69	0	3725	0	3725		82	2217	0	2299
70	0	3557	0	3557		0	1131	0	1131
71	0	3145	0	3145		0	712	0	712
72	0	2840	0	2840		0	644	0	644
73	0	2562	0	2562		0	1182	0	1182
74	0	1167	0	1167		0	789	0	789
75	0	1353	0	1353		0	556	0	556
76	0	1682	0	1682		0	357	0	357
77	0	1050	0	1050		0	577	0	577
78	0	721	0	721		142	139	0	281
79	0	237	0	237		0	487	0	487
80	0	623	0	623		0	78	0	78
81	0	256	0	256		0	110	0	110
82	0	177	0	177		0	207	0	207
83	0	749	0	749		0	158	0	158
84	0	176	0	176		0	0	0	0
85	0	0	0	0		0	246	0	246
86	0	0	0	0		0	0	0	0
87	0	237	0	237		0	79	0	79
88	0	0	0	0		0	50	0	50
89	0	0	0	0		0	0	0	0
90	0	221	0	221		0	0	0	0
<b>Total</b>	397366	1532593	687550	2617509		169836	415504	44229	629568
<b>Samples</b>				57					35
<b>Ind. Sampled</b>				8984					4960
<b>Catch (tons)</b>				2751					688

Table 17 (cont.). Greenland halibut Spanish catches length distribution for Div. 3N and 3O.

Length (cm)	Division 3N					Division 3O			
	Males	Females	Ind.	Total		Males	Females	Ind.	Total
20	0	0	0	0					
21	247	0	0	247					
22	255	0	0	255					
23	0	0	0	0					
24	0	360	0	360					
25	0	0	0	0					
26	0	0	0	0					
27	0	0	0	0					
28	0	364	0	364					
29	0	0	0	0					
30	0	373	0	373					
31	41	0	0	41					
32	613	544	0	1157					
33	1650	510	0	2160					
34	927	838	0	1765					
35	1674	2860	0	4533					
36	3747	6868	0	10615					
37	3316	7140	0	10456					
38	7250	12049	0	19298					
39	8171	14584	0	22755					
40	12943	26166	0	39109					
41	10744	25733	0	36477					
42	14583	28625	0	43208					
43	14521	35960	0	50481					
44	12979	43878	0	56857					
45	13554	38802	0	52356					
46	11408	39485	0	50894					
47	10297	38204	0	48502					
48	7281	37210	0	44491					
49	4736	32677	0	37413					
50	4465	32802	0	37267					
51	3954	26529	0	30483					
52	3490	23733	0	27223					
53	823	19848	0	20670					
54	1011	19353	0	20364					
55	1231	13548	0	14779					
56	1062	8613	0	9676					
57	865	6971	0	7836					
58	241	5971	0	6212					
59	258	5781	0	6039					
60	89	5953	0	6041					
61	333	3797	0	4130					
62	0	3788	0	3788					
63	89	2134	0	2222					
64	0	2806	0	2806					
65	0	1448	0	1448					
66	0	1339	0	1339					

67	0	2401	0	2401	
68	172	1474	0	1646	
69	0	797	0	797	
70	0	681	0	681	
71	0	481	0	481	
72	89	326	0	415	
73	0	251	0	251	
74	0	323	0	323	
75	0	225	0	225	
76	0	189	0	189	
77	0	267	0	267	
78	0	0	0	0	
79	0	0	0	0	
80	0	158	0	158	
81	0	301	0	301	
82	0	0	0	0	
83	0	0	0	0	
84	0	0	0	0	
85	0	0	0	0	
86	0	0	0	0	
87	0	40	0	40	
88	0	103	0	103	
89	0	0	0	0	
90	0	0	0	0	
<b>Total</b>	159109	585661	0	744770	
<b>Samples</b>				40	
<b>Ind Sampled</b>				4389	
<b>Catch (tons)</b>				698	

Table 17 (cont.). Greenland halibut Spanish catches length distribution for Div. 3LMNO.

Length (cm)	Division 3LMNO			
	Males	Females	Indter.	Total
20	0	0	0	0
21	247	0	0	247
22	255	0	0	255
23	0	0	0	0
24	0	661	0	661
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	812	0	812
29	0	429	0	429
30	170	373	79	622
31	41	1138	328	1507
32	1156	1068	422	2646
33	2167	2683	301	5152
34	4016	1780	1417	7214
35	5137	7393	3193	15724
36	12906	11255	4760	28922
37	9925	16035	6858	32819
38	20994	29054	15826	65874
39	29414	39074	29725	98213
40	36097	63785	31025	130907
41	42444	64208	44308	150961
42	52782	73016	53021	178819
43	51618	89494	53376	194487
44	44465	108352	61465	214283
45	49723	109022	67290	226035
46	48925	115530	73376	237831
47	46061	131491	70143	247695
48	39804	139118	75651	254573
49	36736	137808	69280	243824
50	31509	150626	68423	250558
51	41655	176433	1216	219303
52	30426	186848	294	217568
53	26011	143427	0	169438
54	18783	138975	0	157758
55	13567	102077	0	115644
56	10627	83338	0	93965
57	5509	65620	0	71129
58	4092	53893	0	57985
59	4128	53880	0	58008
60	1339	38927	0	40266
61	1117	30548	0	31665
62	824	29131	0	29955
63	379	20296	0	20675
64	359	22446	0	22805
65	119	16736	0	16854
66	237	15627	0	15864

67	60	12396	0	12456
68	172	10617	0	10788
69	82	6740	0	6822
70	0	5369	0	5369
71	0	4338	0	4338
72	89	3810	0	3898
73	0	3994	0	3994
74	0	2279	0	2279
75	0	2133	0	2133
76	0	2228	0	2228
77	0	1895	0	1895
78	142	860	0	1003
79	0	724	0	724
80	0	859	0	859
81	0	668	0	668
82	0	384	0	384
83	0	907	0	907
84	0	176	0	176
85	0	246	0	246
86	0	0	0	0
87	0	356	0	356
88	0	153	0	153
89	0	0	0	0
90	0	221	0	221
<b>Total</b>	<b>726311</b>	<b>2533758</b>	<b>731778</b>	<b>3991847</b>

<b>Samples</b>	<b>132</b>
<b>Ind Sampled</b>	<b>18333</b>
<b>Catch (tons)</b>	<b>4137</b>
<b>SOP</b>	<b>1.00</b>





Table 19. Skates Spanish catches length distribution by sex for Div. 3LNO.

Skates Length (cm)	3LNO			Total
	Males	Females	Ind.	
19	0	146	0	146
20	0	0	0	0
21	0	146	0	146
22	0	0	0	0
23	713	0	0	713
24	146	813	0	960
25	0	407	0	407
26	980	0	0	980
27	171	1261	0	1432
28	571	1789	0	2360
29	754	329	0	1083
30	2071	785	0	2856
31	1422	1210	0	2632
32	2280	3141	0	5421
33	3803	4104	0	7907
34	5082	3473	0	8555
35	8779	3481	0	12259
36	7829	5295	0	13123
37	5529	6129	0	11658
38	13381	15428	0	28810
39	13938	14098	0	28036
40	20134	16153	0	36287
41	18043	22730	0	40773
42	11746	14167	0	25913
43	24752	27388	0	52140
44	17322	20670	0	37991
45	17992	21983	0	39975
46	18039	18688	0	36727
47	18364	21199	0	39563
48	21791	22518	0	44309
49	14376	17645	0	32021
50	22680	15783	0	38463
51	18619	15449	0	34068
52	17153	23904	0	41057
53	22774	20428	0	43202
54	18802	13115	0	31918
55	23819	12366	0	36185
56	18145	10248	0	28393
57	11991	18364	0	30355
58	18083	17464	0	35548
59	17607	10511	0	28118
60	13686	10773	0	24459
61	17544	17540	0	35084
62	12475	15804	0	28278
63	24010	10420	0	34430
64	17578	17163	0	34741
65	14212	10399	0	24612

66	12136	11263	0	23400
67	13567	11463	0	25031
68	24165	18540	0	42704
69	14071	23132	0	37202
70	15851	25240	0	41091
71	6848	25761	0	32609
72	7676	18715	0	26392
73	16861	21000	0	37860
74	13356	25215	0	38571
75	16502	21222	0	37724
76	15879	20199	0	36078
77	17029	19697	0	36725
78	15550	15257	0	30807
79	13595	9579	0	23174
80	14398	7234	0	21632
81	14879	6873	0	21752
82	12215	3816	0	16031
83	8552	3130	0	11682
84	5763	900	0	6663
85	4914	474	0	5389
86	5136	1067	0	6203
87	3885	474	0	4359
88	5844	271	0	6115
89	2036	0	0	2036
90	1779	0	0	1779
91	2084	0	0	2084
92	290	0	0	290
93	678	0	0	678
94	290	0	0	290
95	171	0	0	171
<b>Total</b>	825186	795427	0	1620613

<b>Samples</b>	44
<b>Ind. Sampled</b>	3953
<b>Catch (ton)</b>	3644
<b>SOP</b>	0.96

Table 20. Roughhead grenadier Spanish catches length distribution measured as preanal fin lengths (AFL) for Divisions 3LMNO.

<b>Roughhead G. Length (cm)</b>	<b>3LMNO</b>			<b>Total</b>
	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	
5	0	0	28	28
6	0	299	0	299
7	74	129	56	259
8	215	29	0	245
9	439	808	0	1247
10	865	1534	0	2399
11	2255	2291	0	4546
12	5142	2199	0	7341
13	2785	2841	0	5625
14	7364	4658	0	12022
15	8665	4964	0	13629
16	8749	6991	0	15740
17	9356	8632	0	17988
18	6716	9067	0	15783
19	5719	7666	0	13385
20	3889	9913	0	13802
21	3096	8291	0	11387
22	847	7173	0	8020
23	363	6355	0	6718
24	120	5400	0	5520
25	44	4206	0	4250
26	56	3564	0	3620
27	0	2790	0	2790
28	0	1863	0	1863
29	0	1762	0	1762
30	0	952	0	952
31	0	1893	0	1893
32	0	422	0	422
33	0	304	0	304
34	0	407	0	407
35	0	191	0	191
36	0	44	0	44
37	0	13	0	13
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
<b>Total</b>	<b>66761</b>	<b>107647</b>	<b>84</b>	<b>174492</b>
<b>Samples</b>				<b>41</b>
<b>Ind. Sampled</b>				<b>4715</b>
<b>Catch (tons)</b>				<b>113</b>
<b>SOP</b>				<b>0.97</b>

Table 21. Roughhead grenadier Div. 3LMNO Spanish catches distribution, mean weight (g) and mean length (AFL cm) by age.

Abundance					Mean Weight (g)				
Age	Males	Females	Ind.	Total	Age	Males	Females	Ind.	Total
1	0	0	0	0	1				
2	37	175	33	244	2	40	27	23	28
3	37	283	51	371	3	40	36	38	37
4	976	2628	0	3604	4	94	101		99
5	3762	1789	0	5551	5	143	188		157
6	6089	6214	0	12303	6	194	213		204
7	8053	7328	0	15381	7	273	300		286
8	19122	11876	0	30998	8	367	404		381
9	13438	16656	0	30094	9	487	539		516
10	5903	18202	0	24105	10	626	752		721
11	5882	14711	0	20593	11	724	900		850
12	2544	10990	0	13534	12	819	1141		1080
13	772	6338	0	7110	13	857	1412		1352
14	145	1431	0	1576	14	1066	1898		1821
15	0	2677	0	2677	15		1714		1714
16	0	2043	0	2043	16		1818		1818
17	0	2033	0	2033	17		2458		2458
18	0	1415	0	1415	18		2506		2506
19	0	429	0	429	19		3046		3046
20	0	357	0	357	20		3055		3055
21	0	0	0	0	21				
22	0	19	0	19	22		3834		3834
23	0	0	0	0	23				
24	0	53	0	53	24		2699		2699
Mean Length (cm)									
Age	Males	Females	Ind.	Total					
1									
2	7.5	6.5	6.1	6.6					
3	7.5	7.2	7.3	7.2					
4	9.9	10.3		10.2					
5	11.6	12.7		12.0					
6	12.9	13.2		13.1					
7	14.6	15.0		14.8					
8	16.1	16.7		16.3					
9	17.8	18.5		18.2					
10	19.5	20.7		20.4					
11	20.5	22.0		21.6					
12	21.3	24.0		23.5					
13	21.7	25.9		25.4					
14	23.5	28.7		28.2					
15		27.7		27.7					
16		28.3		28.3					
17		31.4		31.4					
18		31.6		31.6					
19		33.9		33.9					
20		33.9		33.9					
21									
22		36.7		36.7					
23									
24		32.5		32.5					

Table 22. White hake Spanish catches length distribution by sex for Div. 3NO.

White hake Length (cm)	3NO			Total
	Males	Females	Ind.	
20	242	0	0	242
21	0	1653	0	1653
22	0	242	0	242
23	1896	242	0	2138
24	0	1896	0	1896
25	0	0	0	0
26	0	0	0	0
27	242	485	0	727
28	242	7098	0	7340
29	0	6855	0	6855
30	485	10162	0	10647
31	0	19839	0	19839
32	727	11573	0	12300
33	485	14681	0	15165
34	727	9236	0	9963
35	242	3791	0	4034
36	0	242	0	242
37	727	727	0	1455
38	242	242	0	485
39	242	242	0	485
40	0	242	0	242
41	0	242	0	242
42	0	242	0	242
43	485	0	0	485
44	1896	0	0	1896
45	242	0	0	242
46	0	0	0	0
47	727	1653	0	2381
48	0	485	0	485
49	242	242	0	485
50	0	0	0	0
51	485	0	0	485
52	242	242	0	485
53	1896	242	0	2138
54	1653	242	0	1896
55	242	0	0	242
56	1653	242	0	1896
57	242	242	0	485
58	0	242	0	242
59	0	242	0	242
60	0	0	0	0
61	1653	0	0	1653
62	0	0	0	0
63	0	727	0	727
64	0	0	0	0
65	242	242	0	485
66	0	242	0	242

67	0	242	0	242
68	0	485	0	485
69	0	485	0	485
70	242	242	0	485
71	242	485	0	727
72	0	1653	0	1653
73	242	1653	0	1896
74	0	242	0	242
75	0	0	0	0
76	0	485	0	485
77	0	485	0	485
78	0	485	0	485
79	0	242	0	242
80	0	1896	0	1896
81	0	242	0	242
82	0	0	0	0
83	0	0	0	0
84	0	0	0	0
85	0	0	0	0
86	0	485	0	485
87	0	242	0	242
88	0	0	0	0
89	0	0	0	0
90	0	0	0	0
91	0	0	0	0
92	0	242	0	242
93	0	242	0	242
94	0	0	0	0
95	0	485	0	485
<b>Total</b>	19132	106246	0	125378
<b>Samples</b>				2
<b>Ind. Sampled</b>				168
<b>Catch (ton)</b>				85
<b>SOP</b>				1.00

Table 23. Greenland halibut Spanish 2014 catches total Age Length key (ALK).

Commercial-Total				Age																
Length (cm)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	
21	1																		1	
22	1																		1	
23	1																		1	
24																			0	
25		1																	1	
26																			0	
27																			0	
28																			0	
29		1																	1	
30			1																1	
31			2	2															4	
32			3																3	
33			3	4															7	
34			5	5															10	
35			3	15															18	
36			1	16															17	
37				18															18	
38			2	11	3														16	
39			2	14	1														17	
40				12	6														18	
41				11	7														18	
42				7	11														18	
43				7	14														21	
44				6	13														19	
45					18	1													19	
46				1	16	2													19	
47					16	3													19	
48					12	6													18	
49					7	11													18	
50					3	16													19	
51					3	15													18	
52						13	3	1											17	
53						13	2	1											16	
54						11	7												18	
55						6	11	2											19	
56						6	8	2											16	
57						4	8	3											15	
58						2	6	5											13	
59							5	7	4										16	
60							1	2	8	1									12	
61								1	7	4									12	
62								1	5	5	1	1							13	
63									5	4									9	
64									1	5	3								9	
65									1	4	2								7	
66									2	3		1	1						7	
67									1	2	4	3	1						11	
68										2	4	1							7	
69										2	2	3							7	
70										1	2	4	1						8	
71												1	3	2					6	
72											2	3	2						7	
73												1	2	2					5	
74													1	2	2				5	
75													1	2		1			4	
76														2	1	2			5	
77															2				2	
78																			0	
79													1	1	1				3	
80																1	1		2	
81																			0	
82																1	1		2	
83																			0	
84																	1		1	
85															2				2	
86																			0	
87																1			1	
88																			0	
89																			0	
90																			0	
91																		1	1	
Total	3	2	22	129	130	109	51	25	34	33	20	19	16	10	7	4	3	1	618	



Table 23 (Cont.). Greenland halibut Spanish 2014 catches males Age Length key (ALK).

Commercial-Males				Age																
Length (cm)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Total	
21																			0	
22	1																		1	
23																			0	
24																			0	
25		1																	1	
26																			0	
27																			0	
28																			0	
29		1																	1	
30			1																1	
31			1	2															3	
32			2																2	
33			2	1															3	
34			3	4															7	
35			1	7															8	
36				8															8	
37				9															9	
38				7	3														10	
39			1	7	1														9	
40				8	1														9	
41				6	3														9	
42				3	6														9	
43				3	7														10	
44				4	6														10	
45					8	1													9	
46				1	7	1													9	
47					9														9	
48					7	2													9	
49					3	6													9	
50					2	7													9	
51					2	7													9	
52						6	2												8	
53						6	1												7	
54						4	4												8	
55						2	6												8	
56						3	3	1											7	
57						1	3	1											5	
58						2	2	1											5	
59							1	4	1										6	
60									1										1	
61									2	1									3	
62									1	1									2	
63										1									1	
64											1								1	
65																			0	
66																			0	
67																			0	
68																			0	
69																			0	
70																			0	
71																			0	
72																			0	
73																			0	
74																			0	
75																			0	
76																			0	
77																			0	
78																			0	
79																			0	
80																			0	
81																			0	
82																			0	
83																			0	
84																			0	
85																			0	
86																			0	
87																			0	
88																			0	
89																			0	
90																			0	
91																			0	
Total	1	2	11	70	65	48	22	7	5	3	1	0	0	0	0	0	0	0	235	

Table 23 (Cont.). Greenland halibut Spanish 2014 catches females Age Length key (ALK).

[illegible]

Table 24. Roughhead grenadier Spanish 2014 catches total Age Length key (ALK).

Commercial -Total	Age																		
Lenth (cm)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
6.5																			0
7	1																		1
7.5																			0
8																			0
8.5		1																	1
9		1																	1
9.5		1																	1
10		1	3																4
10.5		1	4																5
11		2	4	1															7
11.5			3	5															8
12			3	8															11
12.5			3	8	1														12
13			1	8	3														12
13.5				6	4														10
14			1	2	16	2													21
14.5				1	8	9													18
15				1	8	10	1												20
15.5				1	5	14													20
16				1	3	13	3												20
16.5						18	2	1											21
17						8	15												23
17.5						8	11	2											21
18							15	3		1									19
18.5						1	12	3											16
19						1	9	7	6										23
19.5							4	9	5	1									19
20							1	11	6	2	1								21
20.5						1		8	7										16
21								7	6	1									14
21.5							1	3	3	3	1								11
22								4	4	2									10
22.5									6	2									8
23								2	3	4	1								10
23.5									2	2									4
24									2	7	2								11
24.5										5	2								7
25									2	3	1								6
25.5										1	2		1						4
26										1	4		1						6
26.5											2			1					3
27										1	2								3
27.5											1	1	2	1					5
28												1							1
28.5													1	1					2
29												1	4	3	1				9
29.5												1		2		1			4
30												1			2	2			5
30.5																			0
31															2				2
31.5																1			1
32															2	2	1		5
32.5																	1	1	3
33																	1		1
33.5															1			1	2
34																	1	1	2
34.5																			0
35																			0
35.5																1			1
36																			0
36.5																			0
37																1			2
37.5																			0
38																			0
38.5																			0
39																			0
39.5																			0
40																			0
Total	1	7	22	42	48	85	74	60	52	36	19	5	9	8	8	8	4	3	493

Table 24 (Cont.). Roughhead grenadier Spanish 2014 catches males Age Length key (ALK).

[illegible]



Table 25. Cod 3M 2014 catches Age Length key (ALK).

Commercial Tot 3M	AGE																	Total
Length (cm)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
25																		0
26																		0
27			1															1
28			3															3
29			4															4
30			4															4
31			6															6
32			9															9
33			6	1														7
34			8	2														10
35			5	2														7
36			3	2														5
37			8	11														19
38			9															9
39			4	12														16
40			1	7	2													10
41				10	10													20
42				13	3													16
43				10	7													17
44				7	14													21
45				9	16													25
46				7	18													25
47				4	18													22
48				1	19													20
49				3	16													19
50				2	17	1												20
51				1	20	3												24
52					17	2												19
53					15	1												16
54					16													16
55					21													21
56					17	1												18
57					11	8												19
58					14	7												21
59					11	7												18
60					10	10	2											22
61					4	12												16
62					3	13	1											17
63					1	12	2	1										16
64					1	11	2											14
65					1	10	4	2										17
66						14	2											16
67						9	6											15
68					1	10	4	1										16
69						7	3	4										14
70						3	7	5										15
71						7	9	2										18
72						5	8	4										17
73						2	8	3										13
74						2	7	5	1									15
75						4	12	5	1									22
76						6	9	3										18
77						2	9	6										17
78						1	3	8										12
79						4	4	8	1									17
80							6	6	2									14
81						2	6	5	2									15
82						1	5	10										16
83							3	9	2									14
84							1	10	1									12
85						1	4	7	2									14
86							2	6	2									10
87							2	7	2									11
88							2	6	1	1								10
89								10	5									15
90								5	4	1								10
91								5	5									10
92								6	4									10
93							2	3	5									10
94								1	5	1								7
95								1	5	2								8
96							1	6	8									15
97								1	6	1								8
98								3	5	2								10
99									5	2								7
100									4	3								7
101								1	2	4								7
102								1	3		1							5
103									3	2								5
104									2	1								3
105										3								3
106									1									1
107																		0
108										1								1
109										1								1
110									1	2	1							4
111																		0
112									1									1
113																		0
114																		0
115+													1					0
Total	0	0	62	113	303	178	136	166	91	27	2	1	0	0	0	0	0	1079

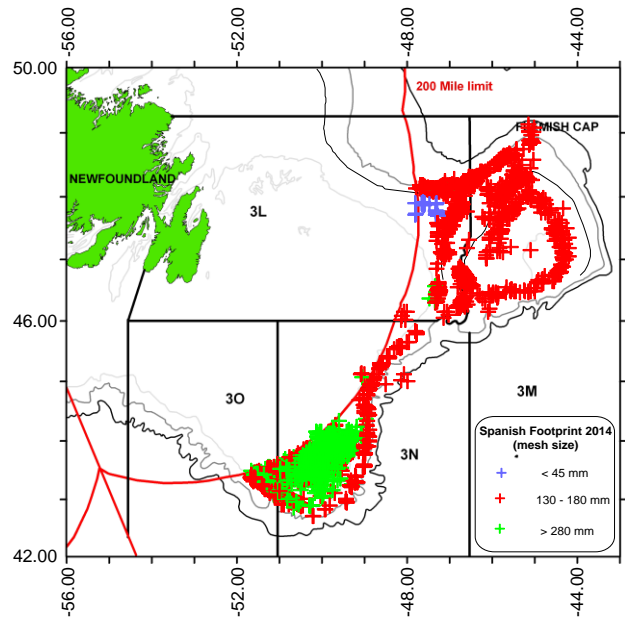


Figure 1. Spanish Fishery 2014 footprint by mesh size based in NAFO Observers data.

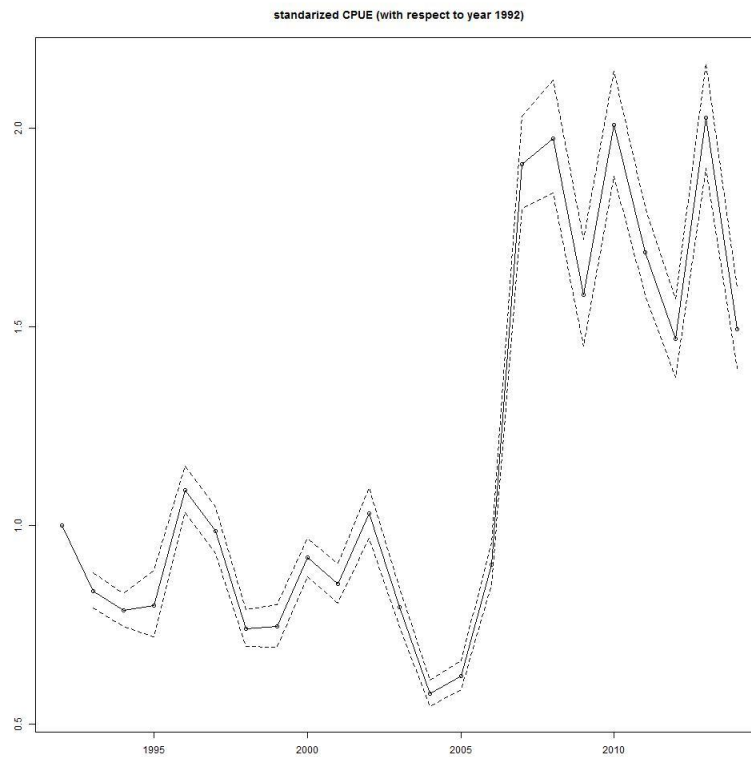


Figure 2. Spanish fleet standardized CPUE with model presented by Gonzalez-Costas and Gonzalez-Troncoso (2009) update with the 2014 data.